

### IN THE SPECIFICATION

**Please delete the following paragraphs beginning on page 3, line 10 – page 4, line 10:**

#### Summary of the Invention

~~A solution to the problems as discussed above is addressed in embodiments of the present invention. In accordance with an embodiment of the present invention, a method of forming a dielectric film includes evaporating  $\text{TiO}_2$  at a first rate, evaporating a lanthanide at a second rate, and controlling the first rate and the second rate to grow a dielectric film on a substrate, where the dielectric film contains  $\text{TiO}_x$  doped with the lanthanide. In one embodiment, the lanthanide includes evaporating a lanthanide selected from a group consisting of Nd, Tb, Dy.~~

~~In one embodiment, lanthanide doped  $\text{TiO}_x$  layers are formed by electron beam evaporation. In another embodiment, the evaporation of  $\text{TiO}_2$  is assisted by ion beam bombardment of a substrate surface during deposition.~~

~~A gate dielectric formed as a dielectric film containing lanthanide doped  $\text{TiO}_x$  has a larger dielectric constant than silicon dioxide, a relatively small leakage current, and good stability with respect to a silicon based substrate. Embodiments according to the teachings of the present invention include forming transistors, capacitors, memory devices, and electronic systems having dielectric layers containing lanthanide doped  $\text{TiO}_x$ . Other embodiments include structures for transistors, capacitors, memory devices, and electronic systems with gate dielectrics containing lanthanide doped  $\text{TiO}_x$ . Such gate dielectrics provide a significantly thinner equivalent oxide thickness compared with a silicon oxide gate having the same physical thickness. Alternatively, such gate dielectrics provide a significantly thicker physical thickness than a silicon oxide gate dielectric having the same equivalent oxide thickness.~~

~~These and other embodiments, aspects, advantages, and features of the present invention will be set forth in part in the description which follows, and in part will become apparent to those skilled in the art by reference to the following description of the invention and referenced drawings or by practice of the invention. The aspects, advantages, and features of the invention are realized and attained by means of the instrumentalities, procedures, and combinations particularly pointed out in the appended claims.~~

**Please insert the following paragraphs beginning on page 6, line 6:**

In accordance with an embodiment of the present invention, a method of forming a dielectric film includes evaporating  $\text{TiO}_2$  at a first rate, evaporating a lanthanide at a second rate, and controlling the first rate and the second rate to grow a dielectric film on a substrate, where the dielectric film contains  $\text{TiO}_x$  doped with the lanthanide. In one embodiment, the lanthanide includes evaporating a lanthanide selected from a group consisting of Nd, Tb, Dy.

In one embodiment, lanthanide doped  $\text{TiO}_x$  layers are formed by electron beam evaporation. In another embodiment, the evaporation of  $\text{TiO}_2$  is assisted by ion beam bombardment of a substrate surface during deposition.

A gate dielectric formed as a dielectric film containing lanthanide doped  $\text{TiO}_x$  has a larger dielectric constant than silicon dioxide, a relatively small leakage current, and good stability with respect to a silicon based substrate. Embodiments according to the teachings of the present invention include forming transistors, capacitors, memory devices, and electronic systems having dielectric layers containing lanthanide doped  $\text{TiO}_x$ .

Other embodiments include structures for transistors, capacitors, memory devices, and electronic systems with gate dielectrics containing lanthanide doped  $\text{TiO}_x$ . Such gate dielectrics provide a significantly thinner equivalent oxide thickness compared with a silicon oxide gate having the same physical thickness. Alternatively, such gate dielectrics provide a significantly thicker physical thickness than a silicon oxide gate dielectric having the same equivalent oxide thickness.